

WHAT IS CLAIMED IS:

1. An apparatus, comprising:

a housing having a chamber therein;
5 a heat absorbing material disposed within said chamber
in said housing; and
a heat pipe disposed within said housing and operative
to facilitate heat distribution within said heat absorbing
material.

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2. An apparatus according to Claim 1, wherein heat
absorbing material is a phase change material.

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3. An apparatus according to Claim 1, wherein said
housing has a thermally conductive portion with an opening
therein, and wherein said heat pipe is disposed within said
opening in said thermally conductive portion.

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4. An apparatus according to Claim 1, including a
plurality of further heat pipes; wherein said housing
includes a plurality of thermally conductive ribs extending
within said chamber and each having therein an opening; and
wherein each said opening has therein a respective one of
said heat pipes.

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5. An apparatus according to Claim 4, wherein each
said opening has a first end which communicates through a
passageway in said housing with a location external to said
housing.

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6. An apparatus according to Claim 5, wherein each
said opening has a second end which is remote from said
first end and which opens outwardly through an outer
surface of said housing.

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7. An apparatus according to Claim 4, wherein said chamber includes a plurality of portions which are substantially separated from each other by said ribs, and wherein said chamber includes a plurality of channels which are provided in said housing and which facilitate fluid communication between said portions of said chamber.

8. An apparatus according to Claim 7, wherein said housing includes a thermally conductive first part having a plurality of recesses provided in one side thereof, each said portion of said chamber being in a respective one of said recesses; wherein said ribs are portions of said first part which are disposed between said recesses; wherein said housing further includes a thermally conductive second part which is disposed against said one side of said first part; and wherein said channels are each a transverse groove provided in a respective said rib on a side thereof adjacent said second part.

9. An apparatus according to Claim 7, wherein said ribs extend radially in respective different directions; wherein said openings in said ribs extend radially; and wherein said portions of said chamber are each sector-shaped, and are each disposed between a respective pair of said ribs.

10. An apparatus according to Claim 7, including an expansion accumulator which is in fluid communication with said chamber, which receives a portion of said heat absorbing material from said chamber when said heat absorbing material expands in response to an increase in temperature, and which returns said portion of said heat absorbing material to said chamber when said heat absorbing material contracts in response to a decrease in temperature.

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11. An apparatus according to Claim 7, including in each said portion of said chamber a thermally conductive member made of a porous material.

5 12. An apparatus according to Claim 11, wherein said housing and said thermally conductive members are all made of a metal, and wherein said thermally conductive members are each brazed to surfaces of said housing which define said chamber.

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13. An apparatus according to Claim 1, including an antenna system which is coupled to said housing and which generates heat that is transferred to said housing.

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14. A method of cooling, comprising the steps of:
transferring heat to a housing which has therein a
chamber that contains a heat absorbing material;
distributing said heat within said heat absorbing
material, including the step of using a heat pipe within
said housing to facilitate distribution of said heat; and
causing said heat absorbing material to absorb said
heat.

10 15. A method according to Claim 14, including the
step of using a phase change material as said heat
absorbing material.

15 16. A method according to Claim 15, including the
step of providing within said chamber a porous material
which is thermally conductive, and which is in contact with
said heat absorbing material.

20 17. A method according to Claim 14, wherein said step
of distributing said heat is carried out using a plurality
of heat pipes.

25 18. A method according to Claim 17, wherein said step
of distributing said heat includes the steps of providing
said housing with a plurality of ribs which are thermally
conductive and each extend within said chamber, and
providing a respective said heat pipe within each of said
ribs.

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Add A5*